

Supplement of Atmos. Chem. Phys., 14, 9567–9581, 2014
<http://www.atmos-chem-phys.net/14/9567/2014/>
doi:10.5194/acp-14-9567-2014-supplement
© Author(s) 2014. CC Attribution 3.0 License.



Supplement of

Factors controlling temporal variability of near-ground atmospheric ^{222}Rn concentration over central Europe

M. Zimnoch et al.

Correspondence to: M. Zimnoch (zimnoch@agh.edu.pl)

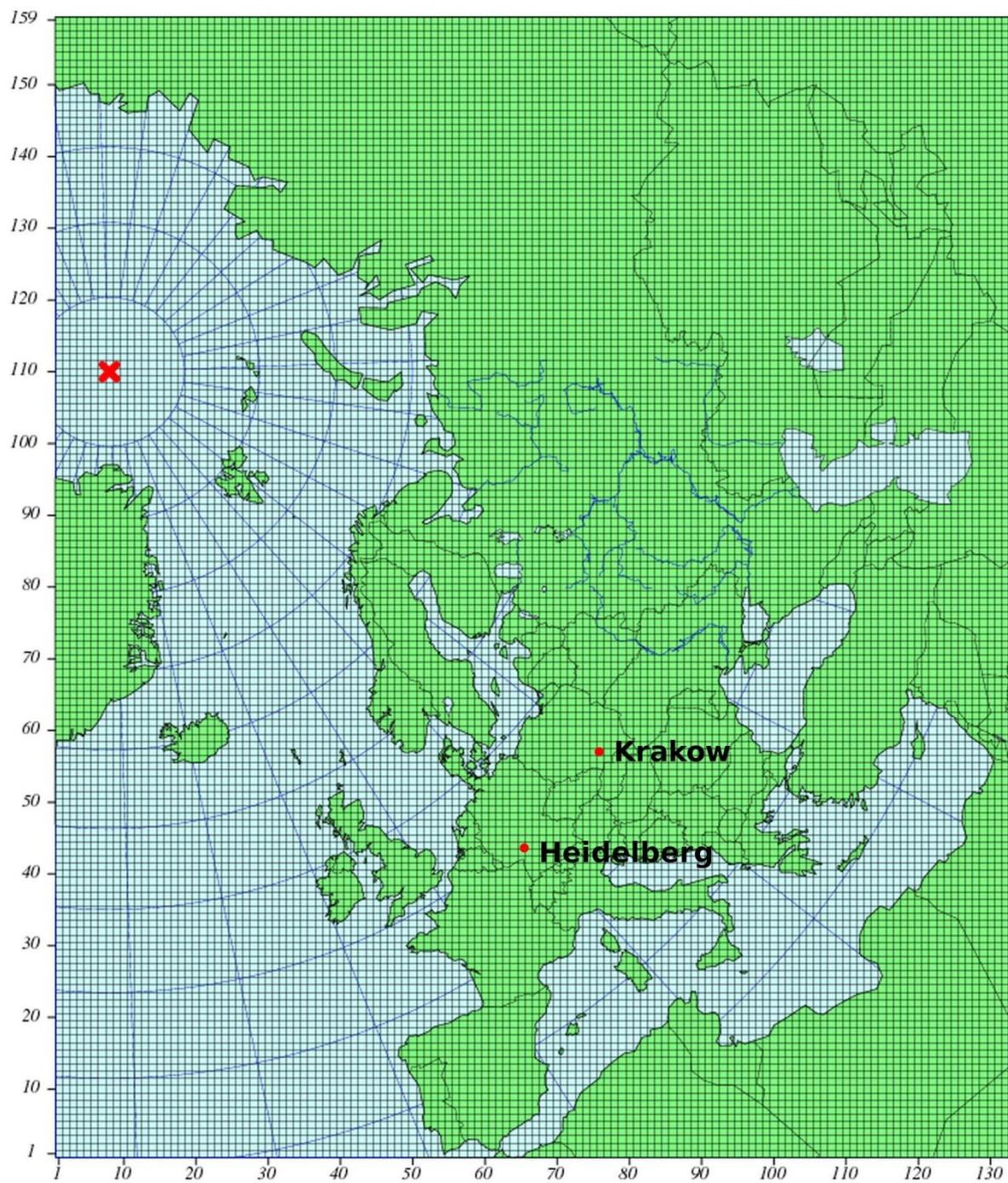


Fig 1S. The domain of Unified EMEP model used to simulate vertical distribution of ^{222}Rn in the lower atmosphere (see text for details). Size of the grid: 50 km x 50 km.

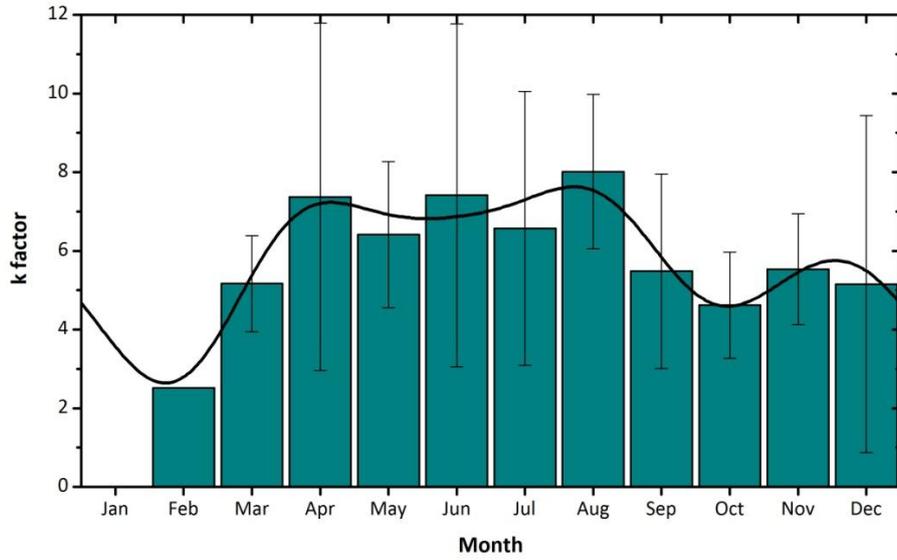


Fig 2S. Monthly mean values of the correction factor k calculated using vertical profiles of ^{222}Rn simulated for Krakow by the Unified EMEP model (see text for details). Thin vertical bars indicate standard uncertainties of mean k values. Heavy line represents the best fit of monthly mean k values.

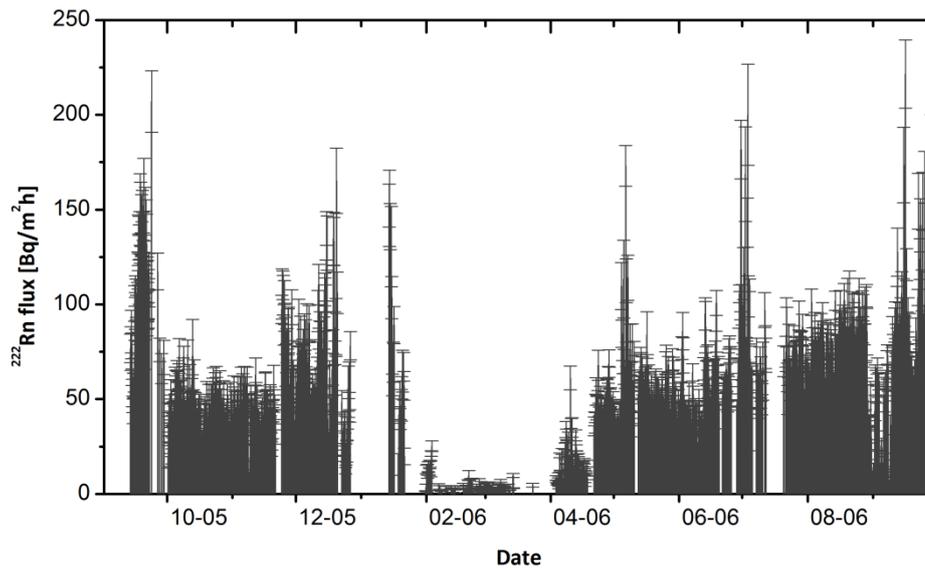


Fig 3S. Time series of ^{222}Rn exhalation rates obtained by chamber method, recorded between September 2005 and September 2006 in Krakow.

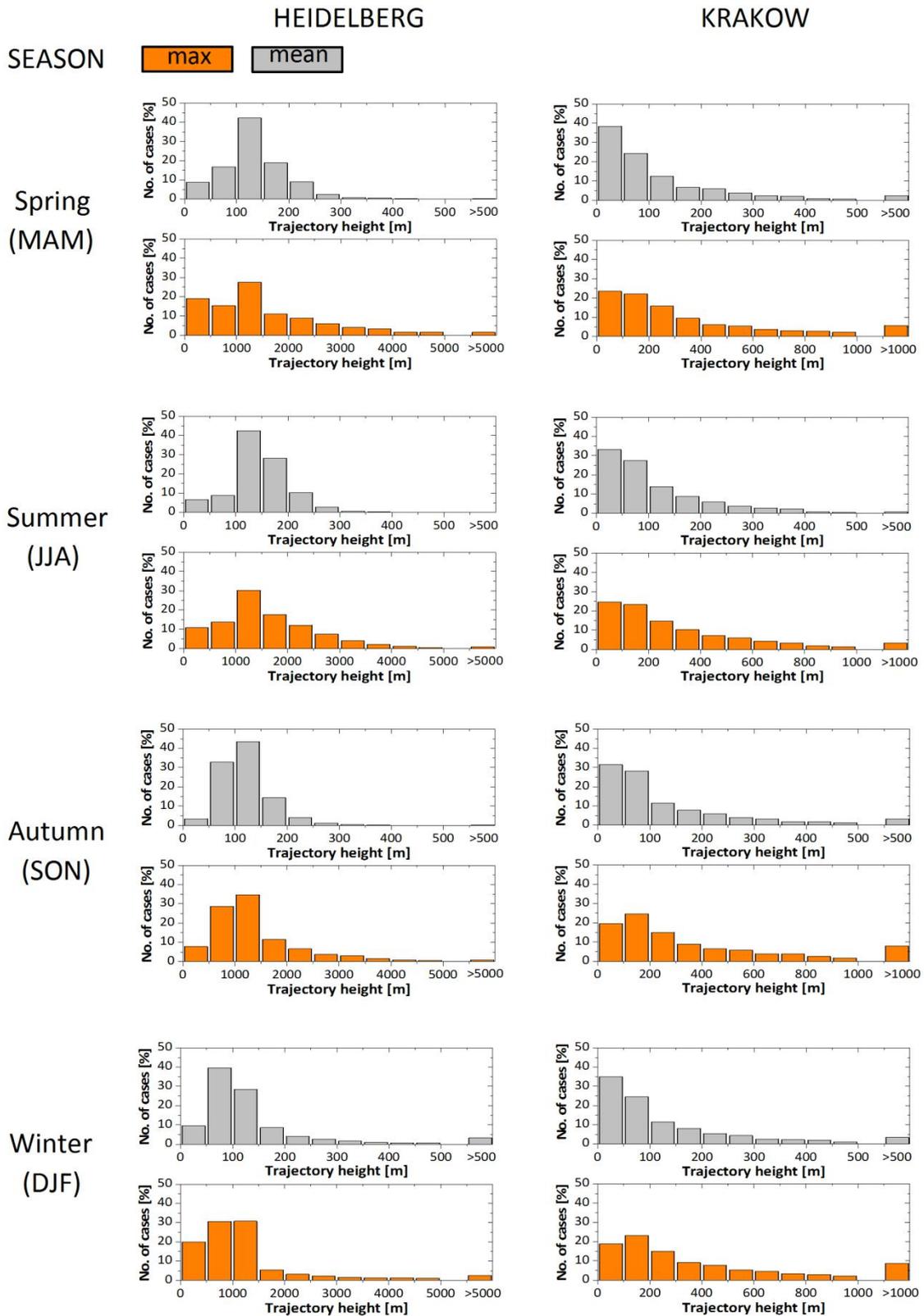


Fig 4S. Histograms of the mean and the maximum trajectory heights calculated for Heidelberg and Krakow stations, separately for four seasons. 96-hours backward trajectories were calculated for every hour during the period from January 2005 till December 2009.

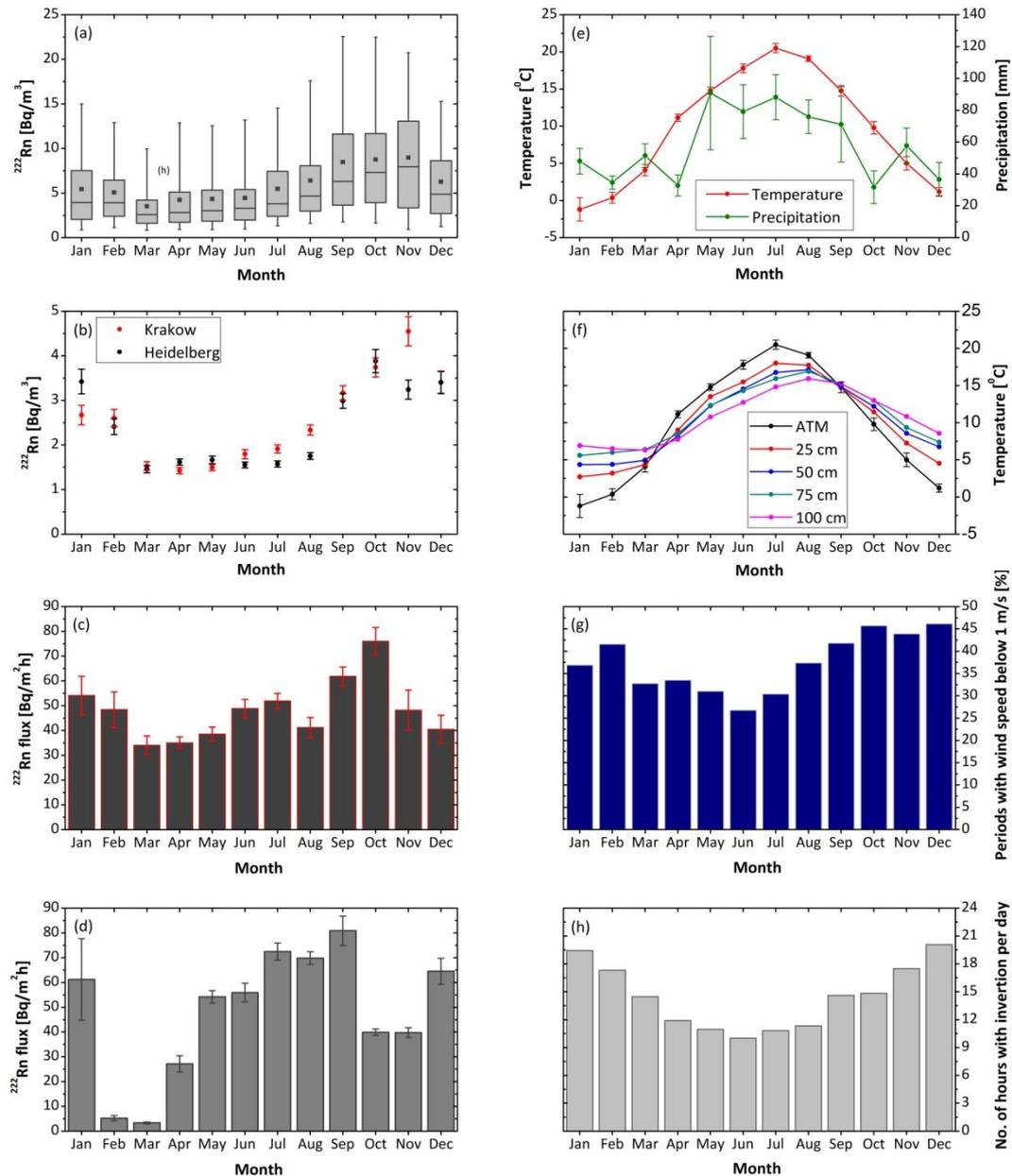


Fig. 5S. (a) - Monthly box-and-whisker plot of ^{222}Rn content in near-ground atmosphere in Krakow. Median is represented by horizontal line while arithmetic average is shown by full dot. (b) - Monthly minima of atmospheric ^{222}Rn content, as observed in Krakow and Heidelberg, calculated as a mean value of daily ^{222}Rn minima for the given month, averaged over entire observation period from January 2005 till December 2009. (c) - Monthly means of night-time ^{222}Rn fluxes into the local atmosphere in Krakow, averaged over the period from June 2004 till May 2009. (d) - Monthly means of soil ^{222}Rn fluxes in Krakow derived from chamber measurements, averaged over the period from September 2005 till September 2006. (e) Monthly means of surface air temperature and precipitation in Krakow, averaged over the period from January 2005 till December 2009. (f) - Monthly means of surface air and soil temperatures in Krakow. (g) - Percentage of periods with wind speed below 1 m s⁻¹ in Krakow, averaged over the period from January 2005 till December 2009. (h) - Monthly means of

number of hours with ground-based inversion per day, averaged over the period from January 1994 till December 1999.